SEGA MASTER SYSTEM

SERVICE MANUAL

SEGA ENTERPRISES, LTD.

SEGA MASTER SYSTEM

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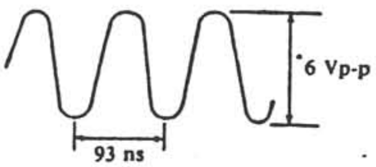
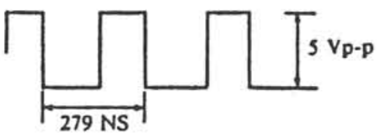
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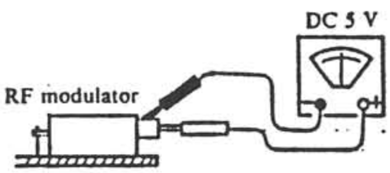
Service Procedures

1. The system is divided into four blocks:
   (1) Main unit (Power base); (2) Software; (3) Auto switchboxes and cables; (4) Controller related
2. Use a tester to check for continuity and confirm that there are no short circuits between the power and ground.
3. Check by individual block:
   Set up a complete, well-operating system as a control; one by one, connect the blocks of the system to be tested to the control system and determine whether the system operates properly with the exchanged blocks.
4. Service by individual block:
   When the source of the malfunction has been narrowed down to the relevant block, service that block or blocks in accordance with the appropriate service procedures.

1. Main Unit (Power Base)

(A)Servicing the main unit (Power Base)

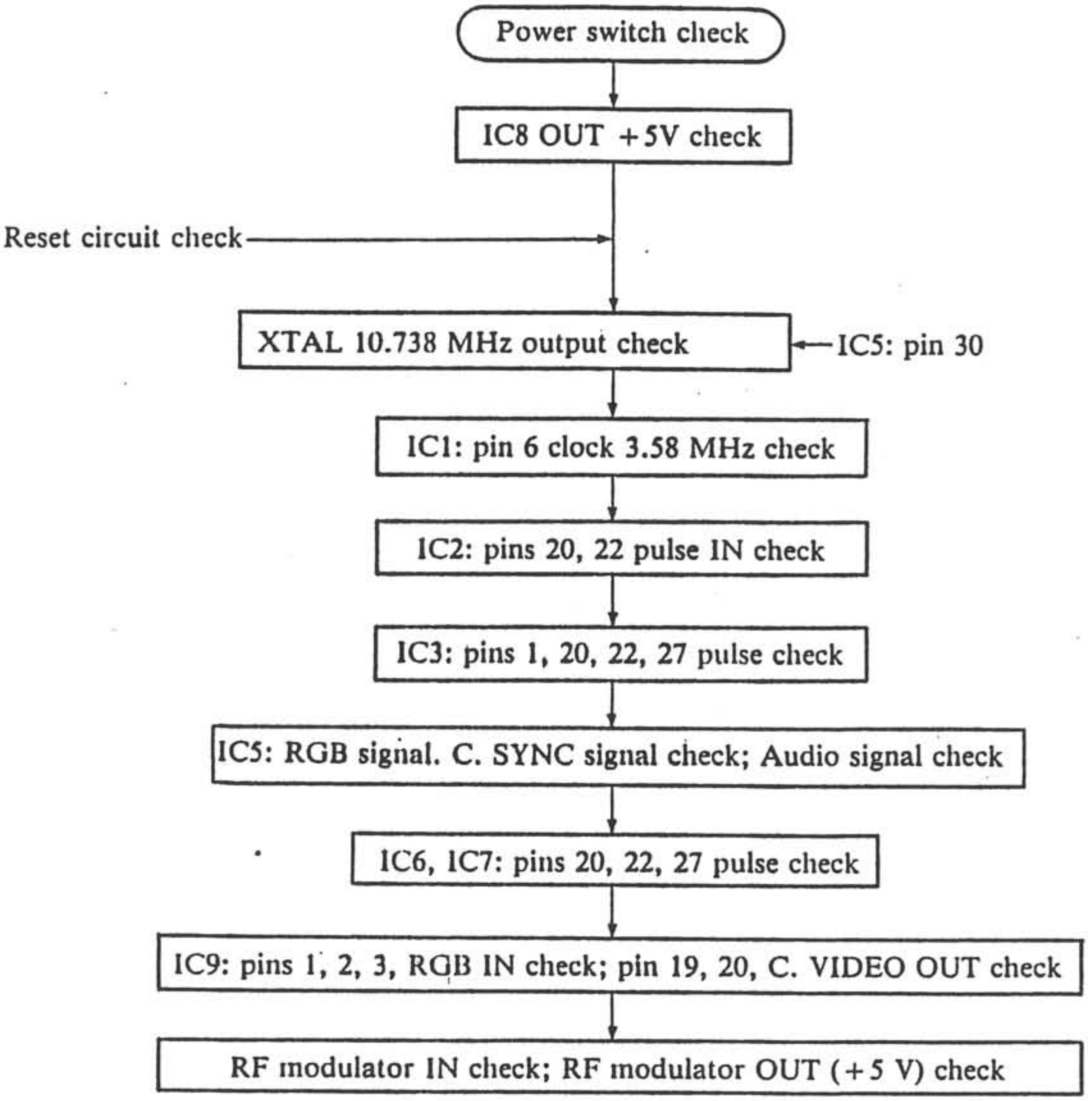
Parts Test Procedure	Fault Location	Symptoms
1. IC8(7805) power check. (1) IN DC 9 V. (2) OUT DC 5 V.	1. IC8 (7805) faulty. 2. Soldering faulty. 3. Short circuit. 4. Printed circuit board (PCB) pattern is cut. 5. POWER switch faulty. 6. Heat sink attachment faulty.	1. LED doesn't light. 2. No picture.
2. Power check of ICs. (1)Is Vcc 5 V power present?	1. PCB pattern is cut. 2. Soldering faulty.	1. No picture. 2. Screen is black.
3. Is reset circuit operating? (1)Use tester to measure voltage of JR. Should be 0—3.6 V (slowly rises).	1. Capacitor (C131) faulty. 2. Soldering faulty. 3. Resistor (R130) faulty.	1. No picture. 2. Screen is black.
4. Is oscillator circuit operating? (1)Pin 30 of IC5: AC 6 Vp-p; 10.738635 MHz ± 100 Hz.  (2)Pin 34 of IC5 clock: 3.579545 MHz ± 30 Hz  	1. XTAL(10M) faulty. 2. C107, C108 faulty. 3. Soldering faulty. 4. PCB pattern is cut. 5. IC5 faulty. 6. Frequency exceeds allowable deviation.	1. No picture. 2. Color may be monochromatic.
5. Check connectors. (1)Make visual check of connector pins. (2)Check for faulty soldering connections.	1. Broken from excessive weight. 2. Soldering faulty. 3. PCB pattern is cut. 4. Terminal plugs are dirty.	1. No picture. 2. Picture is monochromatic. 3. Characters are unnatural. 4. Controls do not respond properly.

Parts Test Procedure	Fault Location	Symptoms
6. Check button switches. (1)Check power button switch.	1. Switch is loose. 2. Soldering faulty 3. PCB pattern is cut. 4. Switch is short-circuited.	1. No power voltage present. 2. LED doesn't light. 3. No picture. 4. Reset occurs spontaneously. 5. Characters suddenly appear abnormal.
(2)Check reset button switch. (3)Check pause button switch.	1. Soldering faulty. 2. PCB pattern is cut. 3. Blade is not parallel with circuit board. 4. Switch is short-circuited.	1. Reset doesn't respond properly. 2. Pause doesn't operate properly.
7. Check RF modulator. (1)Is OUT +5 V present?  	1. PCB pattern is cut. 2. Soldering faulty. 3. RF modulator is faulty.	1. No picture. 2. Picture appears dirty. 3. No sound. 4. Much audio noise.
(2)Check channel selector: Are CH3 and CH4 okay?	1. RF modulator is faulty.	1. CH3 appears but not CH4. 2. CH4 appears but not CH3.
8. Check CON 1. (1)R23 DC 1.3 V (VIDEO) without load. (2)6.5.8 DC 1.9 V (RGB) without load.	1. Various problems are conceivable. In event system is not operating at all. 2. In event IC9 is faulty.	1. No picture.

(B) Possible symptoms for each fault location

Fault Location (Contents of malfunction)	Symptom
1. When IC1 (CPU) is faulty.	1. System doesn't operate at all. No picture at all.
2. When IC2 (OS ROM) is faulty.	1. Since this is the program which operates the system, no picture will appear. 2. Depending on the case, a mosaic pattern may appear.
3. When IC3 RAM is faulty.	1. Since this is the unit that temporarily records data, no picture will appear. 2. Depending on the case, a picture may appear, but it is easily distorted.
4. When IC4 is faulty.	1. Since this IC emits several control signals, no picture will appear. 2. Controller may not respond properly. 3. Pause, reset may not respond properly.
5. When IC5 is faulty.	1. If no oscillation is present, clock 3.58 MHz is not produced, with result that system does not operate at all; no picture will appear. 2. In addition, several control signals are involved; if fault is present, system will not operate and no picture will appear. 3. Even if a picture appears, characters may be distorted. 4. Colors may be improper. 5. Sound may appear alone without picture. 6. Picture may appear alone without sound.
6. When IC6, IC7 are faulty.	1. Since these parts are responsible for temporarily storing color data, picture may not appear. 2. Even if picture appears, colors may be improper. 3. Characters may be distorted. 4. Picture may be move sluggishly or jerkily.
7. When IC8 is faulty.	1. Since this is +5 V stabilized current, if malfunction is present, uniform +5 V is not present; system will not operate and no picture will appear. 2. LED doesn't light.
8. When IC9 is faulty.	1. Since this part converts the RGB signal to composite mode, a malfunction will result in no picture. 2. Even if a picture appears, color may be abnormal.

(C) Flow chart for troubleshooting fault locations



(D)Troubleshooting guide

a) In event controls do not respond normally

Symptom(s)	Fault Location(s)
1. Game doesn't start. 2. Button may not respond when pressed. 3. Absolutely no response at all.	1. CON5 or CON6 faulty (disconnection). 2. Soldering faulty. 3. PCB pattern is cut. 4. IC is faulty. 5. EMI filter is faulty. 6. Resistor 330 ohm is faulty. 7. Check for continuity between CON5 and CON6 terminals and terminals of IC4.
4. Demonstration screen doesn't appear. 5. Switch stays depressed in middle of game. 6. Switch remains fixed in one direction. 7. Starts by itself.	1. CON5 or CON6 is faulty (short-circuited) 2. Soldering is short-circuited. 3. PCB pattern is short-circuited. 4. IC4 is faulty.

b) **In event picture appears alone without sound**

Service Procedures	Fault Location
1. Check whether audio signal is present between pins 1 and 2 of CON1. When a mini-speaker or earphone is connected, sound can be heard. 2. Is audio signal output from pin 10 of IC5? 1) MAX 300 mVp-p 2) 20 Hz—20 kHz	1. CN1 is faulty. 2. Soldering faulty. 3. PCB pattern is cut. 4. Q48, C49, R47 are faulty. 5. R46 is faulty. 6. IC5 is faulty. 7. RF modulator is faulty.

c) **In event picture is not present**

Service Procedures	Fault Location
1. Is video signal present between pins 3 and 2 of CN1? 2. Is video signal present at pin 3 of RF modulator? 3. Is video signal output from pins 19 and 20 of IC9? 4. Is RGB signal output from pins 23 22, and 21 of IC9? 5. Is RGB signal present at pins 1, 2, and 3 of IC9?	1. C28, R27 is absent or faulty. 2. CN1 is faulty. 3. Soldering faulty. 4. PCB pattern is cut. 5. RF modulator is faulty (when picture is present on RF) 6. IC9 is faulty. 7. Peripheral parts around IC9 are faulty.

2. Software

Software (Card or Cartridge) Malfunctions

Symptoms	Fault Location
1. No picture. Picture remains monochromatic. Picture is mosaic pattern.	1. Connector (50 pin) is dirty, disconnected, or other connection fault. 2. Soldering faulty. 3. Short-circuit. 4. Capacitor is missing or faulty. 5. IC is damaged from overheating or static electricity.
2. Characters are disrupted suddenly in middle of game. Reset occurs spontaneously in middle of game. Other abnormal symptoms appear in middle of game.	1. Connection fault at connector (50 pin). 2. Soldering faulty. 3. Capacitor is missing or faulty. 4. IC runaway overheating. 5. In the case of number 4 above, the problem may be rectified by adding a capacitor 100PF—180PF at A13 (address 13). 6. IC is faulty.

3. Auto Switchboxes and Cables

a) Auto switchbox

Symptoms	Fault Location
1. No picture. Game picture doesn't appear. TV picture doesn't appear.	1. Cable is cut or shorted. 2. Plug is faulty. 3. Soldering is faulty on cable connection terminal. 4. PCB pattern is broken or interrupted. 5. Auto-switcher unit is faulty.
2. Sound is bad. Much audio noise.	1. Cable is cracked. 2. Soldering faulty. 3. Plug connection is faulty. 4. Auto switcher is faulty (adjustment faulty).

b) Video Cable

Symptoms	Fault Location
1. No picture. No sound.	1. Cable or plug is faulty; replace all.

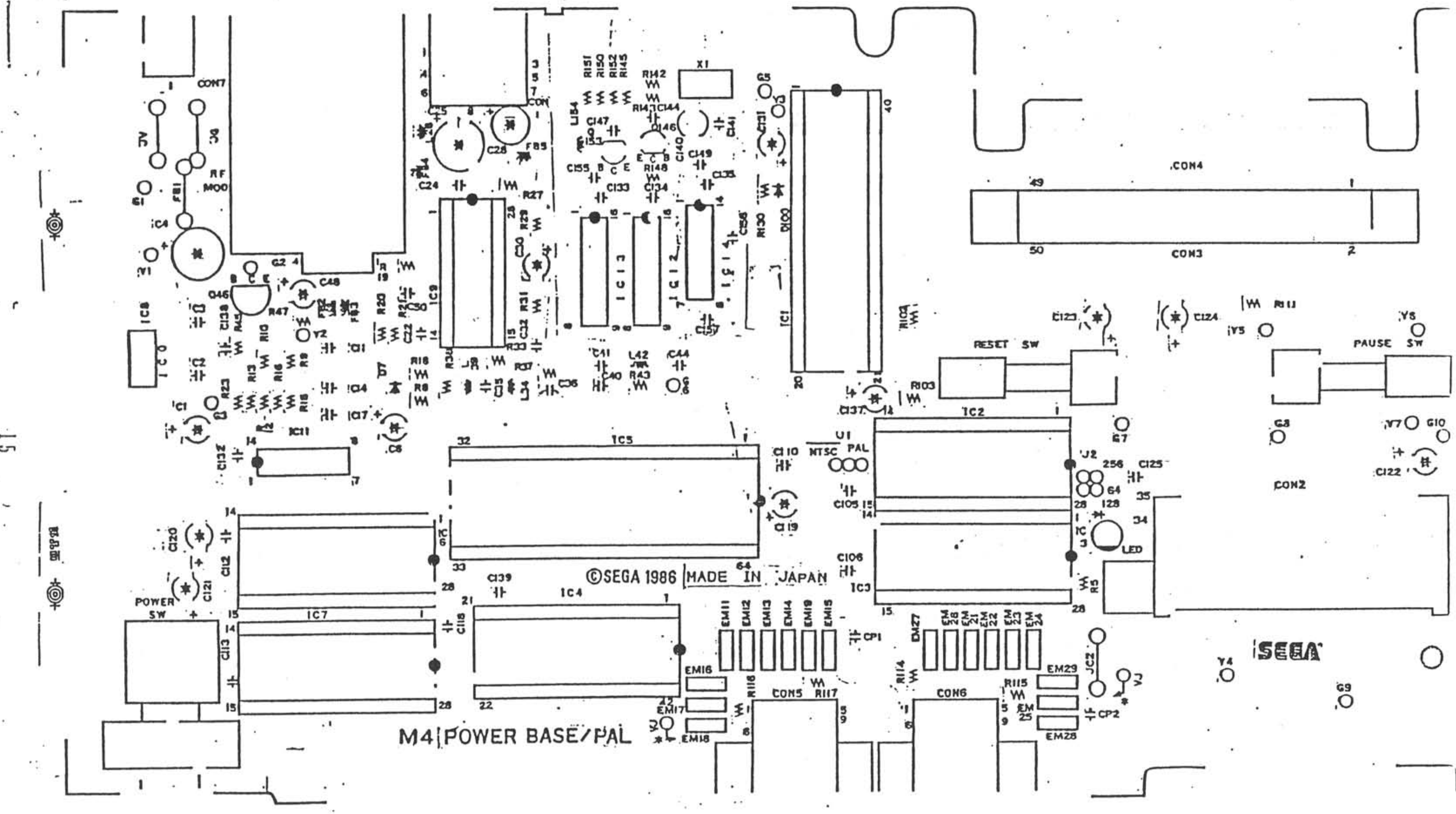
c) AC adaptor

Symptoms	Fault Location
1. No picture. 2. LED doesn't light. 3. 13 V ± 1 V not produced (without load)	1. Replace all.

4. Controller Related

Control pads

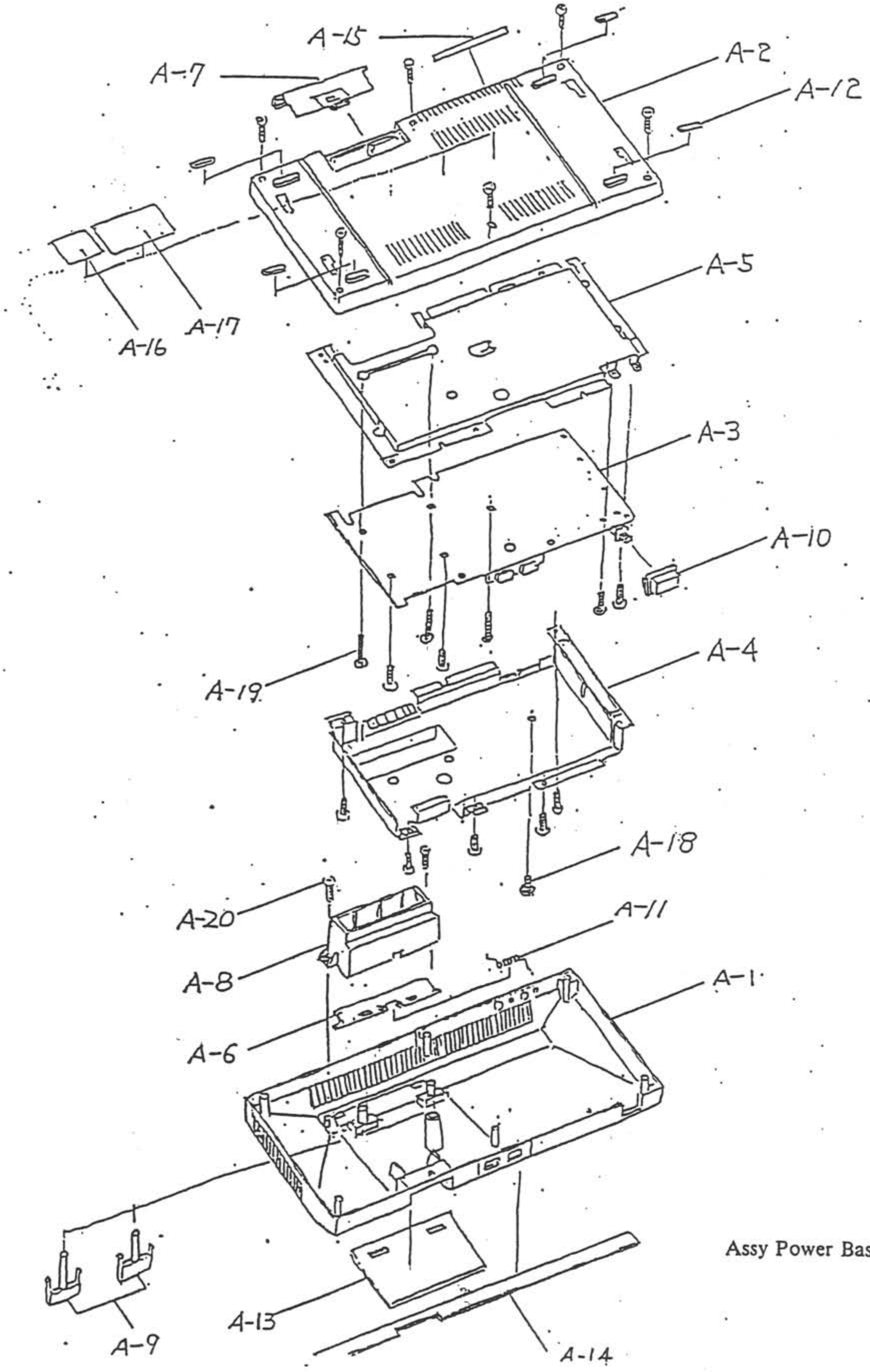
Symptoms	Fault Location
1. Controller does not operate. Doesn't move as it should. Game doesn't start.	1. Cable is cut. 2. Faulty connection at connector. 3. PCB pattern is cut. 4. Conductive rubber is faulty. 5. Soldering faulty.
2. Moves spontaneously by itself. Switch remains depressed in one direction.	1. Cable is shorted. 2. Solder is greasy. 3. Conductive rubber is stuck.


M4 POWER BASE/PAL
©SEGA 1986 MADE IN JAPAN
SEGA
CON2
CON3
CON4
CON5
CON6
CON7
IC1
IC2
IC3
IC4
IC5
IC7
IC9
IC11
RESET SW
PAUSE SW
POWER SW
RF MOD
NTSC PAL
LED

PC MAIN M4

PARTS LIST

1. Master System (Power Base)



Assy Power Base

Description No.	Part No.	Description	Note	Q'ty
	610-0034-03	Assy Power Base AS	(Australia)	1
	610-0034-05	Assy Power Base UK	(United Kingdom)	1
	610-0034-06	Assy Power Base Spain		1
	610-0034-11	Assy Power Base HK	(Hong Kong)	1
	610-0034-13	Assy Power Base ITA	(Italy)	1
	610-0034-18	Assy Power Base WG	(West Germany)	1
	610-0034-20	Assy Power Base Holland		1
A-1	253-6007	Top Case PB		1
A-2	253-6014	Bottom Case PB		1
	837-6097	IC Board PB PAL-G	(Spain ITA WG Holland)	1
A-3	837-6118	IC Board PB PAL-B	(AS)	1
	837-6135	IC Board PB PAL-I	(UK HK)	1
A-4	250-5023	Shield Plate PB Top	(WG Only)	1
A-5	250-5022	Shield Plate PB Bottom		1
A-6	253-6009	Lid A		1
A-7	253-6015	Lid B		1
A-8	253-6010	Cover PB		1
A-9	253-6008	Button PB		1
A-10	253-6013	Power Button PB		1
A-11	125-5016	Torsion Spring		1
A-12	601-5514	Rubber Foot		1
A-13	253-6011	Panel PB		1
A-14	253-6012	Inst Panel PB		1
	421-6419	Seal RF	(AS)	1
A-15	421-6419-18	Seal RF Ger	(UK Spain HK ITA WG Holland)	1
	421-6394-03	Seal Ser No AS		1
	421-6394-05	Seal Ser No UK		1
	421-6394-06	Seal Ser No Spain		1
A-16	421-6394-11	Seal Ser No HK		1
	421-6394-13	Seal Ser No ITA		1
	421-6394-18	Seal Ser No Ger		1
	421-6394-20.	Seal Ser No Holland		1
A-17	421-6429	Seal RFI Mark		1
A-18	000-0306-S	M Scr PH 3 x 6 W/S		1
A-19	029-0072	Tap Scr PH 3 x 16 Blk		1
A-20	012-0312	Tap Scr PH 3 x 12		1

2. PC Main M4

MARK 4 PART LIST PAL TYPE

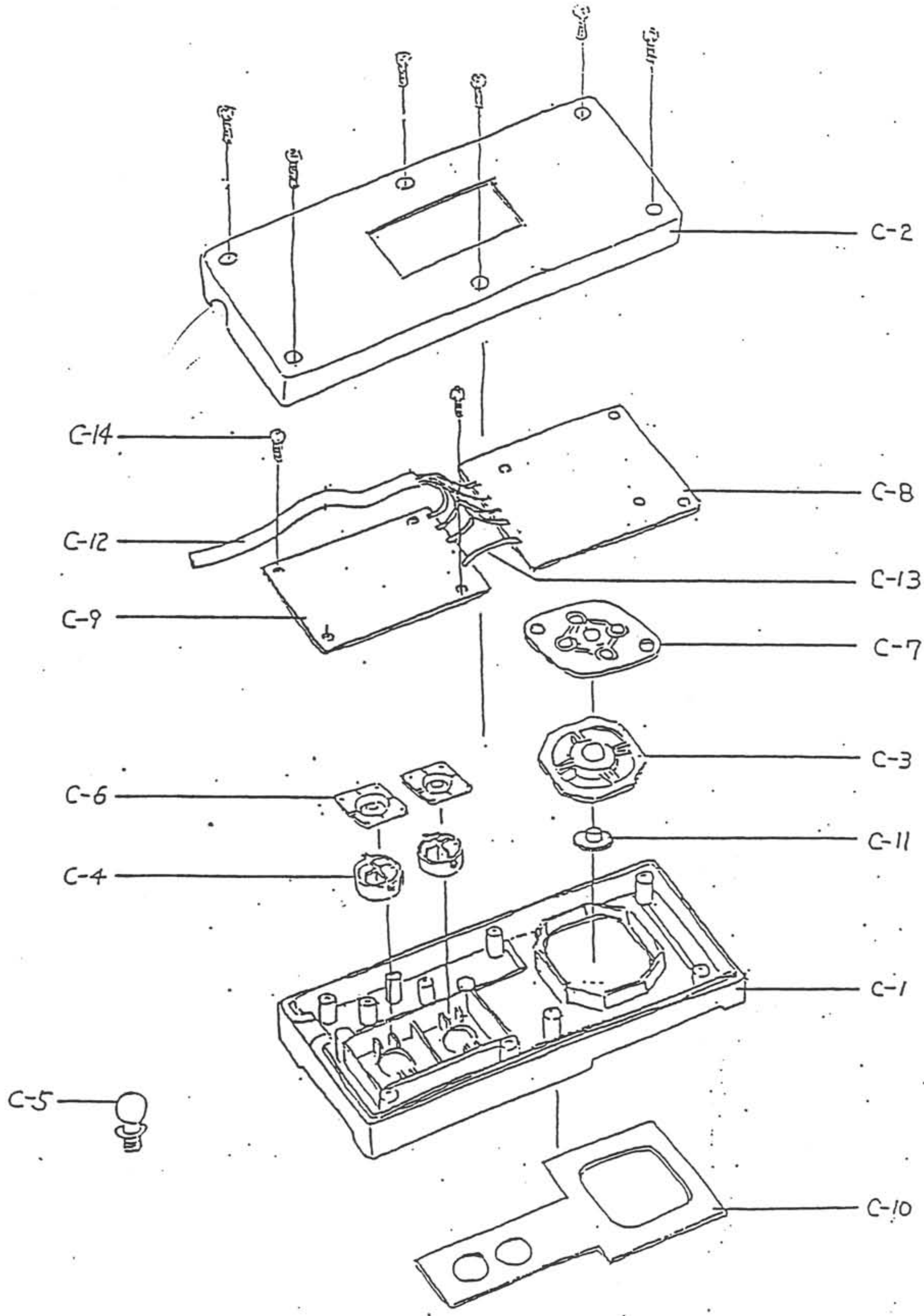
Description No.	Part No.	Description	Note	Q'ty
JV	271-0005	BEADS INDUCTOR FBA04VA600AB		1
JG	271-0005	BEADS INDUCTOR FBA04VA600AB		1
FB1	271-0005	BEADS INDUCTOR FBA04VA600AB		1
FB2	271-0005-1	BEADS INDUCTOR FBA04VA600AB		1
FB3	271-0005-1	BEADS INDUCTOR FBA04VA600AB		1
FB4	271-0005-1	BEADS INDUCTOR FBA04VA600AB		1
FB5	271-0005-1	BEADS INDUCTOR FBA04VA600AB		1
C1	150-0023	CAP E	10 μF 16 V U-TYPE	1
C2	150-0060	CAP CER	0.1 μF 16 V	1
C3	150-0060	CAP CER	0.1 μF 16 V	1
C4	150-0047	CAP E	100 μF 10 V U-TYPE	1
R5	497-0121	RES	120 Ω 1/6 W ± 5%	1
C6	150-0007	CAP E	4.7 μF 16 V U-TYPE	1
D7	481-5045 (481-0149)	DIODE	ISSI33 (1S2473)	1
R8	479-0103	RES	10 KΩ 1/6 W ± 5%	1
R9	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
R10	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
C11	151-0060	CAP CER	0.1 μF 16 V	1
R12	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
R13	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
C14	151-0060	CAP CER	0.1 μF 16 V	1
R15	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
R16	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
C17	151-0060	CAP CER	0.1 μF 16 V	1
R18	479-0103	RES	10 KΩ 1/6 W ± 5%	1
R19	479-0103	RES	10 KΩ 1/6 W ± 5%	1
R20	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
R21	479-0102	RES	1 KΩ 1/6 W ± 5%	1
C22	151-0201	CAP CER	82 pF 50 V CH TYPE	1
R23	479-0222	RES	2.2 KΩ 1/6 W ± 5%	1
C24	151-0060	CAP CER	0.1 μF 16 V	1
C25	150-0047	CAP E	100 μF 10 V U-TYPE	1
L26	180-0049-1	PEAKING COIL	10 μH 02TYPE	1
R27	479-0750	RES	75 Ω 1/6 W ± 5%	1
C28	150-0047	CAP E	100 μF 10 V U-TYPE	1
R29	479-0122	RES	1.2 KΩ 1/6 W ± 5%	1
C30	150-0062	CAP E	47 μF 10 V U-TYPE	1
R31	479-0222	RES	2.2 KΩ 1/6 W ± 5%	1
C32	151-0060	CAP CER	0.1 μF 16 V	1
R33	479-0102	RES	1 KΩ 1/6 W ± 5%	1
L34	180-5032	PEAKING COIL	100 μH 02TYPE	1
C35	151-0190	CAP CER	12 pF 50 V CH TYPE	1
C36	151-0172	CAP CER	180 pF 50 V CH TYPE	1
R37	479-0102	RES	1 KΩ 1/6 W ± 5%	1
R38	479-0102	RES	1 KΩ 1/6 W ± 5%	1
L39	180-5033	PEAKING COIL	12 μH 02TYPE	1

Description No.	Part No.	Description	Note	Q'ty
C40	151-0159	CAP CER	100 pF 50 V CH TYPE	1
C41	151-0190	CAP CER	12 pF 50 V CH TYPE	1
L42	180-5032	PEAKING COIL	100 μH 02TYPE	1
R43	479-0102	RES	1 KΩ 1/6 W ± 5%	1
C44	151-0058	CAP CER	0.01 μF 16 V	1
R45	479-0222	RES	2.2 KΩ 1/6 W ± 5%	1
Q46	482-0261	XSTR	2SC1740 (R or Q)	1
R47	479-0103	RES	10 KΩ 1/6 W ± 5%	1
C48	150-0023	CAP E	10 μF 16 V U-TYPE	1
C50	151-0058	CAP CER	0.01 μF 16 V	1
D100	481-5045 (481-0149)	DIODE	ISSI33 (1S2473)	1
R102	479-0472	RES	4.7 KΩ 1/6 W ± 5%	1
R103	479-0472	RES	4.7 KΩ 1/6 W ± 5%	1
C105	151-0060	CAP CER	0.1 μF 16 V	1
C106	151-0060	CAP CER	0.1 μF 16 V	1
C110	151-0060	CAP CER	0.1 μF 16 V	1
R111	479-0472	RES	4.7 KΩ 1/6 W ± 5%	1
C112	151-0060	CAP CER	0.1 μF 16 V	1
C113	151-0060	CAP CER	0.1 μF 16 V	1
R114	479-0331	RES	330 Ω 1/6 W ± 5%	1
R115	479-0331	RES	330 Ω 1/6 W ± 5%	1
R116	479-0331	RES	330 Ω 1/6 W ± 5%	1
R117	479-0331	RES	330 Ω 1/6 W ± 5%	1
C118	151-0060	CAP CER	0.1 μF 16 V	1
C119	150-0023	CAP E	10 μF 16 V U-TYPE	1
C120	150-0023	CAP E	10 μF 16 V U-TYPE	1
C121	150-0023	CAP E	10 μF 16 V U-TYPE	1
C122	150-0062	CAP E	47 μF 10 V U-TYPE	1
C123	150-0062	CAP E	47 μF 10 V U-TYPE	1
C124	150-0062	CAP E	47 μF 10 V U-TYPE	1
C125	151-0172	CAP CER	180 pF 50 V CH TYPE	1
R130	479-0104	RES	100 KΩ 1/6 W ± 5%	1
C131	150-0023	CAP E	10 μF 16 V U-TYPE	1
C132	151-0060	CAP CER	0.1 μF 16 V	1
C133	151-0060	CAP CER	0.1 μF 16 V	1
C134	151-0060	CAP CER	0.1 μF 16 V	1
C135	151-0060	CAP CER	0.1 μF 16 V	1
C137	150-0023	CAP E	10 μF 16 V U-TYPE	1
C138	151-0172	CAP CER	180 pF 50 V CH TYPE	1
C139	151-0018	CAP CER	150 pF 50 V	1
CP1	151-0060	CAP CER	0.1 μF 16 V	1
CP2	151-0060	CAP CER	0.1 μF 16 V	1
C140	151-5004	CAP TRIMMER	30 pF	1
C141	151-0160	CAP CER	10 pF 50 V CH TYPE	1
R142	479-0103	RES	10 KΩ 1/6 W ± 5%	1
R143	479-0512	RES	5.1 KΩ 1/6 W ± 5%	1
C144	151-0161	CAP CER	22 pF 50 V CH TYPE	1
R145	479-0201	RES	200 Ω 1/6 W ± 5%	1
Q146	482-0270	XSTR	2SC1907	1
C147	151-0008	CAP CER	1000 pF 50 V	1
R148	479-0101	RES	100 Ω 1/6 W ± 5%	1

Description No.	Part No.	Description	Note	Q'ty
C149	151-0202	CAP CER	39 PF 50 V CH TYPE	1
R150	479-0183	RES	18 KΩ 1/6 W± 5%	1
R151	479-0332	RES	3.3 KΩ 1/6 W ± 5%	1
R152	479-0271	RES	270 Ω 1/6 W ± 5%	1
Q153	482-0270	XSTR	2SC1907	1
L154	180-5032	PEAKING COIL	100 μH 02 TYPE	1
C155	151-0060	CAP CER	0.1 μF 16 V	1
C156	151-0002	CAP CER	100 pF 50 V	1
C157	151-0002	CAP CER	100 pF 50 V	1
EM11	271-0007	EMI FILTER	2200 pF	1
EM12	271-0007	EMI FILTER	2200 pF	1
EM13	271-0007	EMI FILTER	2200 pF	1
EM14	271-0007	EMI FILTER	2200 pF	1
EM15	271-0007	EMI FILTER	2200 pF	1
EM16	271-0007	EMI FILTER	2200 pF	1
EM17	271-0006	EMI FILTER	270 pF	1
EM18	271-0007	EMI FILTER	2200 pF	1
EM19	271-0007	EMI FILTER	2200 pF	1
EM21	271-0007	EMI FILTER	2200 pF	1
EM22	271-0007	EMI FILTER	2200 pF	1
EM23	271-0007	EMI FILTER	2200 pF	1
EM24	271-0007	EMI FILTER	2200 pF	1
EM25	271-0007	EMI FILTER	2200 pF	1
EM26	271-0007	EMI FILTER	2200 pF	1
EM27	271-0006	EMI FILTER	270 pF	1
EM28	271-0007	EMI FILTER	2200 pF	1
EM29	271-0007	EMI FILTER	2200 pF	1
XI	230-5035	CRYSTAL	53.203424MHz ± 5 ppm	1
LED	390-5128	LED	SLP-280U-F50 GREEN	1
IC1	315-0041	IC	Z80ACPU	1
IC2	MPR-10052	IC	ROM CXK3864P-20	1
IC3	315-0298 (315-0298-15)	IC	RAM μ PD4168-20 (or μ PD4168-15)	1
IC4	315-5216 (315-5204)	IC	CUSTOM CHIP G/A FUJITSU (or NEC)	1
IC5	315-5124	IC	CUSTOM CHIP VDP	1
IC6	315-0298-15	IC	RAM μ PD4168-15	1
IC7	315-0298-15	IC	RAM μ PD4168-15	1
IC8	313-0092	IC	REG 7805	1
IC9	313-5054	IC	RGB ENCODER V7040	1
IC11	314-0062	IC	74LS74	1
IC12	314-0355	IC	74ALS174	1
IC13	314-0356	IC	74ALS175	1
IC14	314-0358	IC	74ALS74	1
CON1	212-5106	DIN CONNECTOR 8P B-TYPE		1
CON2	209-5020	CARD CONNECTOR 35P		1
CON3	209-5023-01 (209-5023)	EDGE CONNECTOR 50P MITSUMI (or BANDY)		1
CON5	209-5017-01	D-SUB CONNECTOR 9P		1
CON6	209-5017-01	D-SUB CONNECTOR 9P		1
CON7	212-5004	POWER JACK		1
POWER SW	509-5150	PUSH SWITCH		1
RESET SW	509-5031	BLADE SWITCH		1
PAUSE SW	509-5031	BLADE SWITCH		1

3. Control Pad

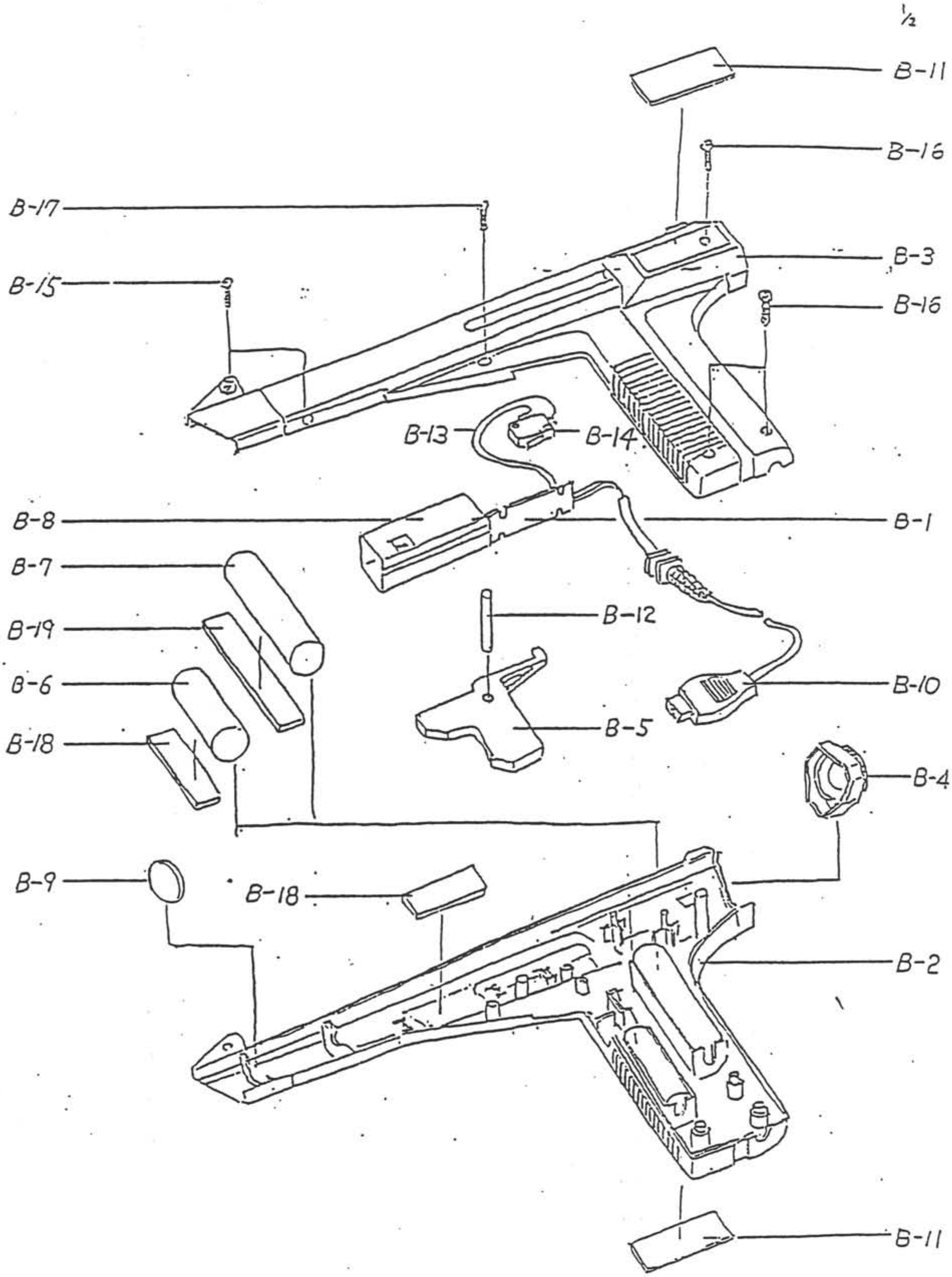
ASSY CONTROL PAD 610-0180



Description No.	Part No.	Description	Note	Q'ty
C-1	253-6020	Top Case 3020		1
C-2	253-6021	Bottom Case 3020		1
C-3	253-6024	Pad 3020		1
C-4	253-6023	Button 3020		2
C-5	253-5071	Stick SJ-150	W/Poly Bag (2 set)	1
C-6	509-5089-1	Rubber Contact 1P SJ-151		2
C-7	509-5090-1	Rubber Contact 4P SJ-151		1
C-8	171-5193-3	PC Board 45 x 38 3020		1
C-9	171-5194-2	PC Board 51 x 31 3020		1
C-10	253-6022	Instruction Plate 3020		1
C-11	253-6032	Blind Cover 3020		1
C-12	600-5306	Assy Cable 9P L=2m 3020		1
C-13	600-5137-1	Jumper Wire SJ-151		1
C-14	012-0208-1	Tap Scr PH No.1 2 x 8		6

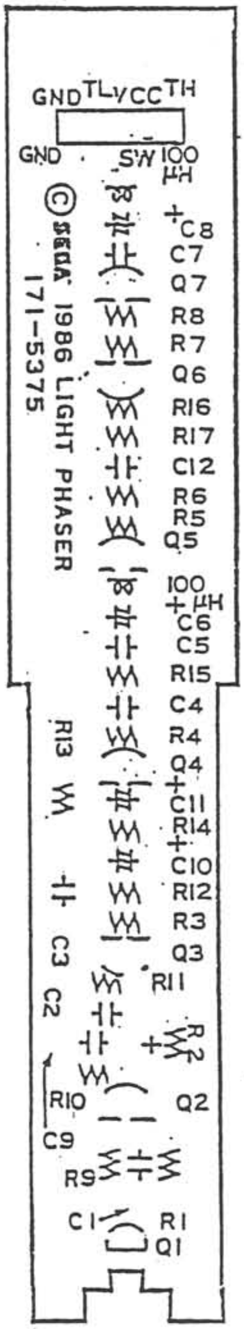
4. Light Phaser

ASSY LIGHT PHASER



610-0035

Description No.	Part No.	Description	Note	Q'ty
B-1	837-6068	PC Board Light Phaser		1
B-2	253-6027	Right Case LP		1
B-3	253-6028	Left Case LP		1
B-4	253-6029	Case Cover LP		1
B-5	253-6030	Trigger LP		1
B-6	250-5020	Weight A		1
B-7	250-5021	Weight B		1
B-8	250-5024	Shield Cover LP		1
B-9	380-5003	Lens LP		1
B-10	600-5299	Cord Assy LP		1
B-11	421-6396	Seal LP		2
B-12	123-5011	Shaft LP		1
B-13	600-5010-10	Cable Vinyl Single 1.5 mm/mm 0.8 x 16 Str.	Red	0.2 m
B-14	509-5151	Switch Micro Type V-151-3A5 or (AH71517)	Omron or Matushita	1
B-15	029-0068	Tap Scr PH 2 x 6 Blk		2
B-16	029-0069	Tap Scr PH 2.6 x 10 Blk		3
B-17	029-0070	Tap Scr PH 2.6 x 8 Blk		1
B-18	601-5588	RUBBER CUSHION A		2
B-19	601-5589	RUBBER CUSHION B		1



LIGHT PHASER

SEGA MASTER SYSTEM

PARTS PRICE LIST

and

[illegible]

SEGA SEGA ENTERPRISES, LTD.

PARTS PRICE LIST FOR SEGA POWER SYSTM (RGB)

PARTS NO.	PARTS NAME	FOB PRICE
400-5048Y	AC ADAPTER	¥767
271-0005	BEADS INDUCTOR FBA04VA600AB	¥6
271-0005-1	BEADS INDUCTOR FBA04VA600VB	¥7
610-0030	BOTTOM CASE ASSY PB	¥319
253-6008	BUTTON PB	¥18
209-5020	CARD CONNECTOR 35P PRE35R-1	¥148
610-0180	CONTROL PAD ASSY	¥429
209-5017-01	D-SUB 9P ANGLE TYPE UC-0060#2	¥43
212-5106	DIN CONN 8P B-TYPE UC-0059#2	¥51
481-0149	DIODE 1S2473	¥4
481-5038	DIODE 1SR-35-100A	¥10
209-5023	EDGE CONNECTOR 50P PSB4D25S-4RI	¥127
271-0006	EMI FILTER STB271KB	¥12
271-0007	EMI FILTER STX222MB	¥12
315-5216	IC CUSTOM CHIP G/A	¥216
315-5124	IC CUSTOM CHIP YM2602	¥1,182
313-5067	IC CXA-1145P	¥342
MPR-10052	IC CXK3864P-20	¥318
313-0092	IC MA7805UC	¥48
315-0298-15	IC UPD4168C-15	¥422
315-0298	IC UPD4168C-20	¥417
MPR-11458	IC uPD23C1011 FOR MS	¥645
MPR-11459	IC uPD23C1011 FOR MS PLUS	¥634
MPR-11460	IC uPD23C1011 FOR SS	¥630
315-0041	IC Z80A	¥172
601-6057	INDIVIDUAL BOX BS FIVE(3080)	¥170
671-0116	INDIVIDUAL BOX MS FIVE (3095)	¥170
671-0114	INDIVIDUAL BOX MS PLUS FIVE (3090)	¥185
671-0115	INDIVIDUAL BOX SS FIVE (3091)	¥195
390-5128	LED SLP-280F-51U	¥14
253-5071	MINI STICK SJ150	¥18
212-5004	PIN PLUG FOR DC/NP UC-0056#2	¥26
253-6013	POWER BUTTON PB	¥15
509-5150	PUSH SWITCH SPQ-01N	¥87
610-0130	RGB BOX FRANCE	¥800
509-5207	TACT SWITCH SKEVAA	¥17
610-0158	TOP CASE ASSY PBVA	¥630
482-0270	TR 2SC1907	¥25
230-0046-1	XTAL 10.738635MHz+-30ppm	¥79

PARTS PRICE LIST FOR SEGA POWER SYSTM (PAL-I)

PARTS NO.	PARTS NAME	FOB PRICE
400-5048Y	AC ADOPTER	¥767
400-5056	AC ADOPTER (UK)	¥1,560
400-5057	AC ADOPTER (HK)	¥794
271-0005	BEADS INDUCTOR FBA04VA600AB	¥6
271-0005-1	BEADS INDUCTOR FBA04VA600VB	¥7
610-0030	BOTTOM CASE ASSY PB	¥319
253-6008	BUTTON PB	¥18
151-5004	CAP CER TRIMMER 30pF	¥18
209-5020	CARD CONNECTOR 35P PRE35R-1	¥148
610-0180	CONTROL PAD ASSY	¥429
209-5017-01	D-SUB 9P ANGLE TYPE UC-0060#2	¥43
212-5106	DIN CONN 8P B-TYPE UC-0059#2	¥51
481-0149	DIODE 1S2473	¥4
481-5038	DIODE 1SR-35-100A	¥10
481-5045	DIODE 1SS133	¥3
209-5023	EDGE CONNECTOR 50P PSB4D25S-4RI	¥127
271-0006	EMI FILTER STB271KB	¥12
271-0007	EMI FILTER STX222MB	¥12
314-0355	IC 74ALS174	¥95
314-0356	IC 74ALS175	¥95
314-0358	IC 74ALS74	¥58
314-0361	IC 74HC132	¥77
315-5216	IC CUSTOM CHIP G/A	¥216
315-5124	IC CUSTOM CHIP YM2602	¥1,182
313-5067	IC CXA-1145P	¥342
MPR-10883	IC CXK3864P-20	¥247
313-0092	IC MA7805UC	¥48
315-0298-15	IC UPD4168C-15	¥422
315-0298	IC UPD4168C-20	¥417
MPR-11458	IC uPD23C1011 FOR MS (3091)	¥645
MPR-11459	IC uPD23C1011 FOR MS PLUS (3090)	¥634
MPR-11460	IC uPD23C1011 FOR SS (3095)	¥630
315-0041	IC Z80A	¥172
601-6057	INDIVIDUAL BOX BS FIVE(3080)	¥170
671-0116	INDIVIDUAL BOX MS FIVE(3095)	¥170
671-0114	INDIVIDUAL BOX MS PLUS FIVE(3090)	¥185
671-0115	INDIVIDUAL BOX SS FIVE(3091)	¥195
390-5128	LED SLP-280F-51U	¥14
253-5071	MINI STICK SJ150	¥18
180-5032	PEAKING COIL 100uF	¥10
180-5033	PEAKING COIL 12uH	¥10
212-5004	PIN PLUG FOR DC/NP UC-0056#2	¥26
253-6013	POWER BUTTON PB	¥15
509-5150	PUSH SWITCH SPQ-01N	¥87
200-5088	RF MODULATER VV3421	¥685
200-5020	RF SWITCH BOX	¥191
313-5054	RGB ENCORDER V-7040	¥401
509-5207	TACT SWITCH SKEVAA	¥17
610-0158	TOP CASE ASSY PBVA	¥630
482-0270	TR 2SC1907	¥25
600-5040-02	TV EXTENSION CABLE 2C2V	¥135
230-5035	XTAL 53.203424MHz	¥176

PARTS PRICE LIST FOR SEGA POWER SYSTM (PAL-B)

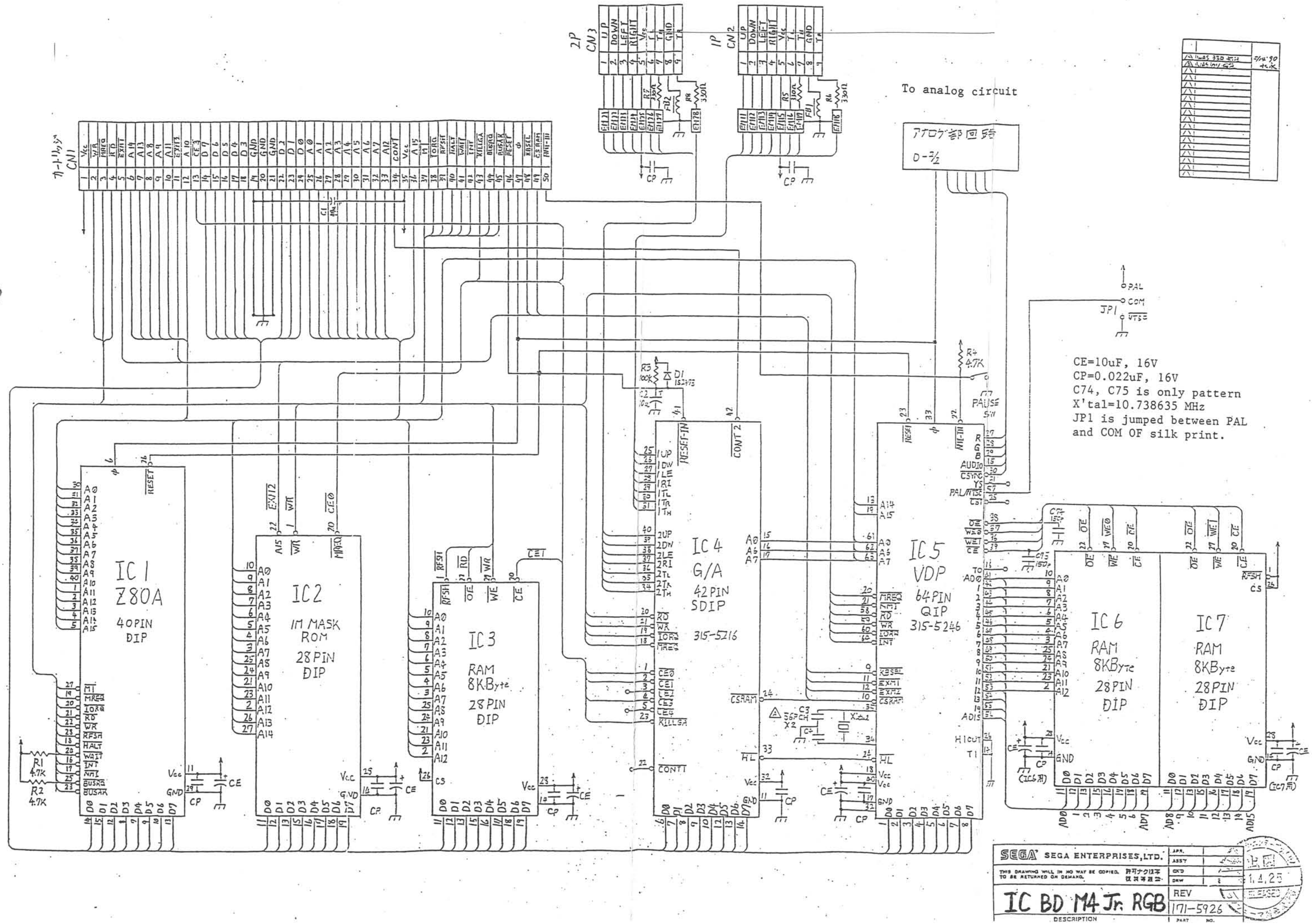
PARTS NO.	PARTS NAME	FOB PRICE
400-5048Y	AC ADAPTER	¥767
400-5050	AC ADAPTER (AUSTRALIA)	¥767
271-0005	BEADS INDUCTOR FBA04VA600AB	¥6
271-0005-1	BEADS INDUCTOR FBA04VA600VB	¥7
610-0030	BOTTOM CASE ASSY PB	¥319
253-6008	BUTTON PB	¥18
151-5004	CAP CER TRIMMER 30pF	¥18
209-5020	CARD CONNECTOR 35P PRE35R-1	¥148
610-0180	CONTROL PAD ASSY	¥429
209-5017-01	D-SUB 9P ANGLE TYPE UC-0060#2	¥43
212-5106	DIN CONN 8P B-TYPE UC-0059#2	¥51
481-0149	DIODE 1S2473	¥4
481-5038	DIODE 1SR-35-100A	¥10
481-5045	DIODE 1SS133	¥3
209-5023	EDGE CONNECTOR 50P PSB4D25S-4RI	¥127
271-0006	EMI FILTER STB271KB	¥12
271-0007	EMI FILTER STX222MB	¥12
314-0355	IC 74ALS174	¥95
314-0356	IC 74ALS175	¥95
314-0358	IC 74ALS74	¥58
314-0361	IC 74HC132	¥77
315-5216	IC CUSTOM CHIP G/A	¥216
315-5124	IC CUSTOM CHIP YM2602	¥1,182
313-5067	IC CXA-1145P	¥342
MPR-10883	IC CXK3864P-20	¥247
313-0092	IC MA7805UC	¥48
315-0298-15	IC UPD4168C-15	¥422
315-0298	IC UPD4168C-20	¥417
MPR-11458	IC uPD23C1011 FOR MS (3091)	¥645
MPR-11459	IC uPD23C1011 FOR MS PLUS (3090)	¥634
MPR-11460	IC uPD23C1011 FOR SS (3095)	¥630
315-0041	IC Z80A	¥172
601-6057	INDIVIDUAL BOX BS FIVE(3080)	¥170
671-0116	INDIVIDUAL BOX MS FIVE(3095)	¥170
671-0114	INDIVIDUAL BOX MS PLUS FIVE(3090)	¥185
671-0115	INDIVIDUAL BOX SS FIVE(3091)	¥195
390-5128	LED SLP-280F-51U	¥14
253-5071	MINI STICK SJ150	¥18
180-5032	PEAKING COIL 100uF	¥10
180-5033	PEAKING COIL 12uH	¥10
212-5004	PIN PLUG FOR DC/NP UC-0056#2	¥26
253-6013	POWER BUTTON PB	¥15
509-5150	PUSH SWITCH SPQ-01N	¥87
200-5109	RF MODULATER VV3402	¥767
200-5088	RF MODULATER VV3421(AUSTRALIA)	¥767
200-5020	RF SWITCH BOX	¥191
313-5054	RGB ENCORDER V-7040	¥401
509-5207	TACT SWITCH SKEVAA	¥17
610-0158	TOP CASE ASSY PBVA	¥630
482-0270	TR 2SC1907	¥25
600-5040-02	TV EXTENSION CABLE 2C2V	¥135
230-5035	XTAL 53.203424MHz	¥176

PARTS PRICE LIST FOR SEGA POWER SYSTM (PAL-G)

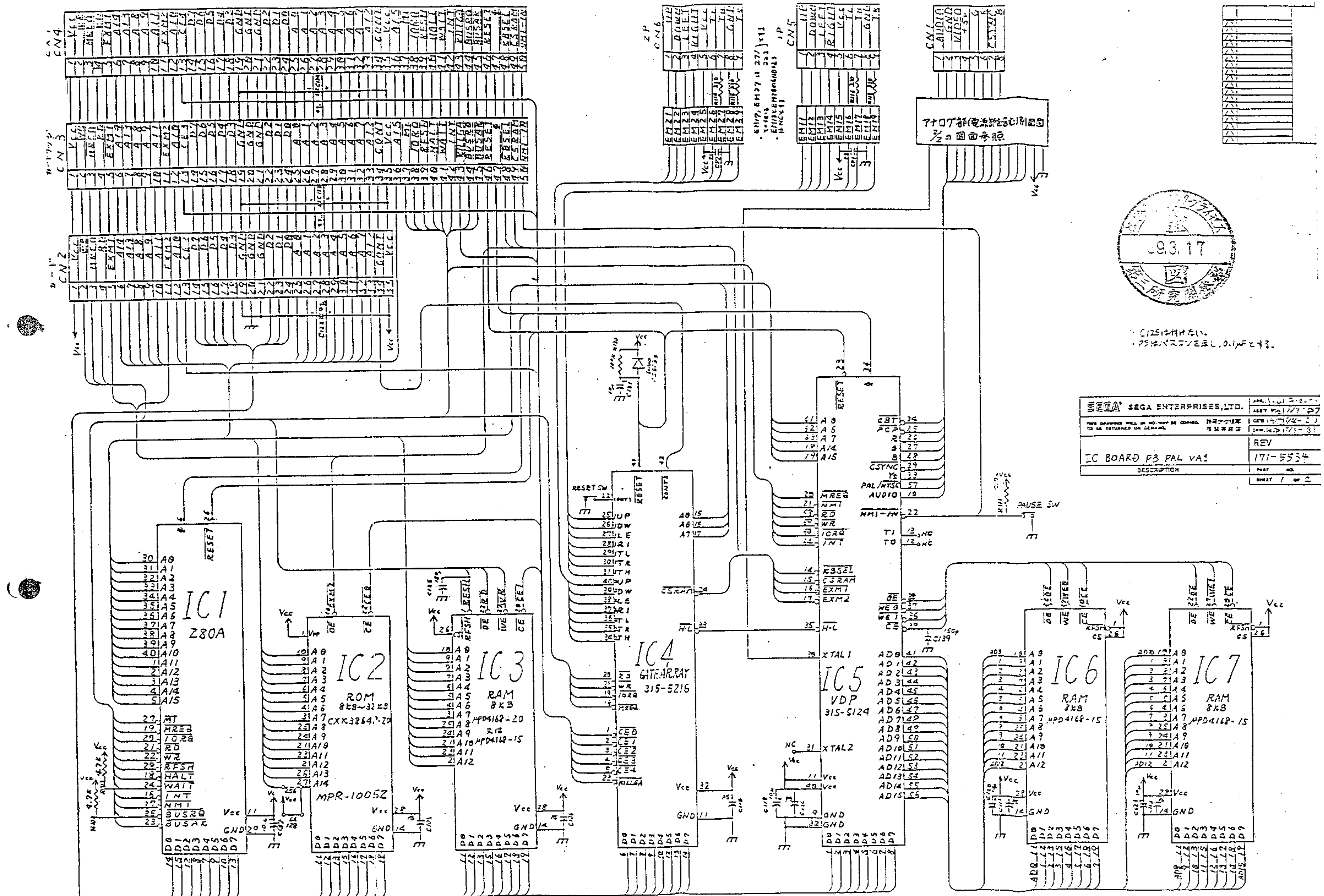
PARTS NO.	PARTS NAME	FOB PRICE
400-5048Y	AC ADAPTER	¥767
271-0005	BEADS INDUCTOR FBA04VA600AB	¥6
271-0005-1	BEADS INDUCTOR FBA04VA600VB	¥7
610-0030	BOTTOM CASE ASSY PB	¥319
253-6008	BUTTON PB	¥18
151-5004	CAP CER TRIMMER 30pF	¥18
209-5020	CARD CONNECTOR 35P PRE35R-1	¥148
610-0180	CONTROL PAD ASSY	¥429
209-5017-01	D-SUB 9P ANGLE TYPE UC-0060#2	¥43
212-5106	DIN CONN 8P B-TYPE UC-0059#2	¥51
481-0149	DIODE 1S2473	¥4
481-5038	DIODE 1SR-35-100A	¥10
481-5045	DIODE 1SS133	¥3
209-5023	EDGE CONNECTOR 50P PSB4D25S-4RI	¥127
271-0006	EMI FILTER STB271KB	¥12
271-0007	EMI FILTER STX222MB	¥12
314-0355	IC 74ALS174	¥95
314-0356	IC 74ALS175	¥95
314-0358	IC 74ALS74	¥58
314-0361	IC 74HC132	¥77
315-5216	IC CUSTOM CHIP G/A	¥216
315-5124	IC CUSTOM CHIP YM2602	¥1,182
313-5067	IC CXA-1145P	¥342
MPR-10883	IC CXK3864P-20	¥247
313-0092	IC MA7805UC	¥48
315-0298-15	IC UPD4168C-15	¥422
315-0298	IC UPD4168C-20	¥417
MPR-11458	IC uPD23C1011 FOR MS (3091)	¥645
MPR-11459	IC uPD23C1011 FOR MS PLUS (3090)	¥634
MPR-11460	IC uPD23C1011 FOR SS (3095)	¥630
315-0041	IC Z80A	¥172
601-6057	INDIVIDUAL BOX BS FIVE(3080)	¥170
671-0116	INDIVIDUAL BOX MS FIVE(3095)	¥170
671-0114	INDIVIDUAL BOX MS PLUS FIVE(3090)	¥185
671-0115	INDIVIDUAL BOX SS FIVE(3091)	¥195
390-5128	LED SLP-280F-51U	¥14
253-5071	MINI STICK SJ150	¥18
180-5032	PEAKING COIL 100uF	¥10
180-5033	PEAKING COIL 12uH	¥10
212-5004	PIN PLUG FOR DC/NP UC-0056#2	¥26
253-6013	POWER BUTTON PB	¥15
509-5150	PUSH SWITCH SPQ-01N	¥87
200-5086	RF MODULATER UE3622	¥792
200-5020	RF SWITCH BOX	¥191
313-5054	RGB ENCORDER V-7040	¥401
509-5207	TACT SWITCH SKEVAA	¥17
610-0158	TOP CASE ASSY PBVA	¥630
482-0270	TR 2SC1907	¥25
600-5040-02	TV EXTENSION CABLE 2C2V	¥135
230-5035	XTAL 53.203424MHz	¥176

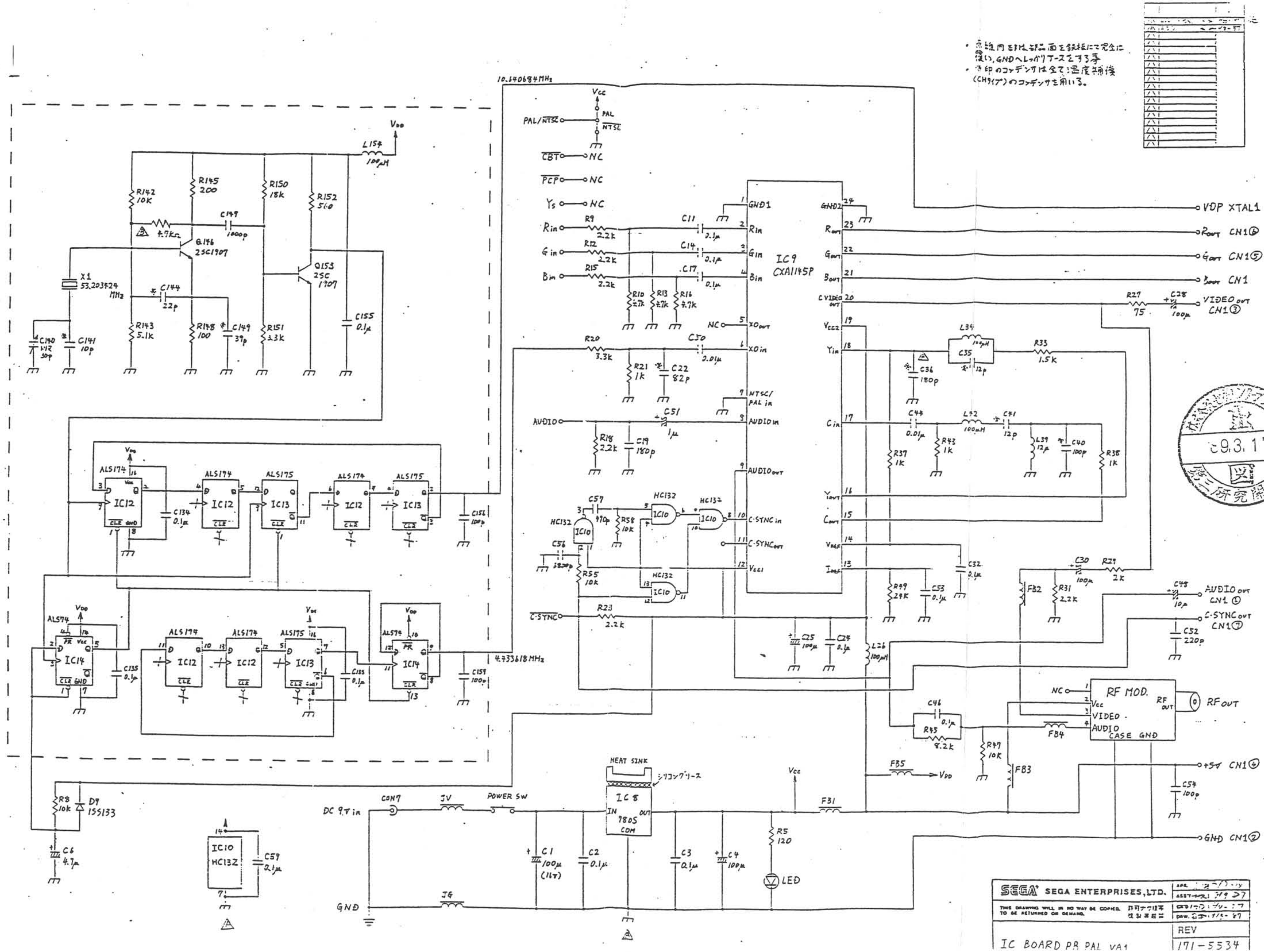
PARTS PRICE LIST FOR SEGA LIGHT PHASER

PARTS NO.	PARTS NAME	FOB PRICE
253-6029	CASE COVER LP	¥17
600-5299	CORD ASSY LP	¥191
253-6028	LEFT CASE LP	¥92
380-5003	LENS LP	¥29
837-6068	PC BOARD LIGHT PHASER	¥1,633
253-6027	RIGHT CASE LP	¥92
250-5024	SHIELD COVER LP	¥27
253-6030	TRIGGER LP	¥17
250-5020	WEIGHT A	¥38
250-5021	WEIGHT B	¥41
601-5610-50	INDIVIDUAL BOX LP FIVE	¥95



2P CN3
1P CN2
UP
DOWN
LEFT
RIGHT
Vcc
TL
TH
GND
TR
To analog circuit
アナログ部回路
D-7/2
カートリッジ CN1
Vcc
WR
MREQ
RD
EXIT
A13
A11
EXIT3
A10
CE3
D7
D5
D4
D3
GND
D2
D1
D0
A0
A1
A2
A3
A4
A5
A6
A7
A12
CONT
A15
M1
IORQ
RFSH
HALT
WAIT
INT
KILLGA
BUSRQ
BUSAK
RESET
KBSEL
CSRAM
NMI-III
C1
PAL
COM
NTSC
JP1
R4 4.7K
PAUSE SW
R3 100K
D1 1S2473
C2 10μ
CE=10uF, 16V
CP=0.022uF, 16V
C74, C75 is only pattern
X'tal=10.738635 MHz
JP1 is jumped between PAL and COM OF silk print.
IC1
Z80A
40PIN DIP
IC2
1M MASK ROM
28PIN DIP
IC3
RAM
8KByte
28PIN DIP
IC4
G/A
42PIN SDIP
315-5216
IC5
VDP
64PIN QIP
315-5246
IC6
RAM
8KByte
28PIN DIP
IC7
RAM
8KByte
28PIN DIP
RESET-IN
CONT2
CONT1
CSRAM
C3 56PCH
X2
X'tal
HL
H1CUT
AUDIO
CSYNC
PAL/NTSC
R1 4.7K
R2 4.7K
CE
CP
(IC6用)
(IC7用)
SEGA SEGA ENTERPRISES, LTD.
THIS DRAWING WILL IN NO WAY BE COPIED, TO BE RETURNED ON DEMAND.
許可ナク復写ヲ禁ズ
IC BD M4 Jr. RGB
171-5926
DESCRIPTION
REV


CN4
CN3
CN2
2P CN6
1P CN5
CN1
アナログ部(電源部含む)別図面
2/2の図面参照
RESET SW
PAUSE SW
IC1
Z80A
IC2
ROM
MPR-10052
IC3
RAM
IC4
GATEARRAY
315-5216
IC5
VDP
315-5124
IC6
RAM
IC7
RAM
SEGA ENTERPRISES, LTD.
IC BOARD P3 PAL VA1
DESCRIPTION
REV
171-5554



SEGA SEGA ENTERPRISES, LTD.

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REV

IC BOARD PR PAL VA1

171-5534